Special Issue

Petroleum Engineering: Advances and Prospects

Message from the Guest Editor

The petroleum industry continues to evolve in response to global energy demands, technological advancements, and environmental considerations. This Special Issue aims to highlight the cutting-edge research and innovative developments shaping the future of hydrocarbon exploration, production, and sustainability. With the growing complexity of reservoirs, including unconventional resources and deepwater fields, petroleum engineers are leveraging advanced techniques such as enhanced oil recovery (EOR), hydraulic fracturing optimization, and digital transformation through artificial intelligence (AI) and machine learning (ML). Additionally, the integration of sustainable practices, such as carbon capture, utilization, and storage (CCUS), underscores the industry's commitment to reducing its environmental footprint. This Special Issue will compile multidisciplinary contributions on reservoir characterization, drilling technologies, production optimization, and energy transition strategies. By addressing both technical challenges and economic viability, we aim to foster discussions on maximizing recovery efficiency while embracing cleaner energy solutions.

Guest Editor

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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